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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/938,250	08/23/2001	Satoshi Suzuki	1232-4758	1302

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EXAMINER	
MISLEH, JUSTIN P	

ART UNIT	PAPER NUMBER
2612	

DATE MAILED: 03/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/938,250	SUZUKI, SATOSHI	
	Examiner	Art Unit	
	Justin P Misleh	2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1 - 46 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1 - 46 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 23 August 2001 is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

2. The abstract of the disclosure is objected to because of its length. Correction is required. See MPEP § 608.01(b).

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: IRCLK (page 11).

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: ST1, ST2, SH, CCDCLR, 49, 17, 18, and 19 (All from figure 14). In regards to reference signs 17- 19, the Applicant has introduced 19L, 19R, 18L, 18R, 17L, and 17R; however, the Applicant has not generically described 17 – 19.

5. Figure 11 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).

6. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of

an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the Examiner does not accept the changes, the Applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 101

7. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. **Claims 39 – 46** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. For independent Claims 39, 41, 43, and 45, a program causing a computer to execute a method that is not tangibly embodied on a computer readable medium is non-statutory subject matter.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. **Claims 1 – 46** are rejected under 35 U.S.C. 103(a) as being unpatentable over Egawa et al. in view of Goff.

11. For **Claims 1 and 20**, Egawa et al. disclose, as shown in figures 13, 18, 20, and 29, an image sensing apparatus and a corresponding method of operating thereof (see figures 1 – 3, 8, and 19) comprising (the steps thereof):

a signal generator adapted to generate a signal upon reception of input light (1012 – see figure 18);

a transfer unit adapted to transfer the signal generated by said signal generator (1018 – see figure 18);

an amplification unit adapted to amplify the signal transferred from said transfer unit (1201 – see figure 18); and

a control unit (1106 – see figure 18).

However, Egawa et al. do not disclose a temperature measuring unit adapted to measure a temperature and wherein the control unit is adapted to control a gain of said amplification unit at a first temperature to be lower than a gain of said amplification unit at a second temperature in accordance with a measurement by said temperature measuring unit, the second temperature being lower than the first temperature.

On the other hand, Goff also disclose an amplification unit and a control unit. Furthermore, Goff specifically teaches in figures 1 and 3, column 3 (lines 35 – 63), and the abstract, a temperature measuring unit (thermometer 19) adapted to measure a temperature and wherein a control unit (control section 22) is adapted to control a gain of an amplification unit (Stages 1 – 6) at a first temperature (T4) to be lower than a gain of the amplification unit (Stages 1 – 6) at a second temperature (T1) in accordance with a measurement by said temperature

measuring unit (19; see column 4, lines 13 – 16), the second temperature (T1) being lower than the first temperature (T4).

As stated in columns 1 (lines 15 – 18) and 2 (lines 49 – 56) of Goff, at the time the invention was made, it would have been obvious to one with ordinary skill in the art to have included a temperature measuring unit and a control unit adapted to change a gain of said amplification unit in accordance with a measurement in said temperature measuring unit, as taught by Goff, in the apparatus including and an amplification unit and a control unit, disclosed by Egawa et al., for the advantage of maintaining consistent electrical characteristics in changing ambient temperatures.

12. For **Claims 2 and 21**, Egawa et al. disclose, as shown in figures 13, 18, 20, and 29, an image sensing apparatus and a corresponding method of operating thereof (see figures 1 – 3, 8, and 19) comprising (the steps thereof):

a signal generator adapted to generate a signal upon reception of input light (1012 – see figure 18);

a transfer unit adapted to transfer the signal generated by said signal generator (1018 – see figure 18);

an amplification unit adapted to amplify the signal transferred from said transfer unit (1201 – see figure 18); and

a control unit (1106 – see figure 18).

However, Egawa et al. do not disclose a temperature measuring unit adapted to measure a temperature and wherein the control unit is adapted to decrease a gain when a temperature measured by said temperature measuring unit is higher than a predetermined temperature and

increase the gain when the temperature measured by said temperature measuring unit is lower than the predetermined temperature.

On the other hand, Goff also disclose an amplification unit and a control unit. Furthermore, Goff specifically teaches in figures 1 and 3, column 3 (lines 35 – 63), and the abstract, a temperature measuring unit (thermometer 19) adapted to measure a temperature and wherein a control unit (control section 22) is adapted to decrease a gain when a temperature measured by the temperature measuring unit is higher than a predetermined temperature and increase the gain when the temperature measured by said temperature measuring unit is lower than the predetermined temperature (see column 4, lines 13 – 16).

As stated in columns 1 (lines 15 – 18) and 2 (lines 49 – 56) of Goff, at the time the invention was made, it would have been obvious to one with ordinary skill in the art to have included a temperature measuring unit and a control unit adapted to change a gain of said amplification unit in accordance with a measurement in said temperature measuring unit, as taught by Goff, in the apparatus including and an amplification unit and a control unit, disclosed by Egawa et al., for the advantage of maintaining consistent electrical characteristics in changing ambient temperatures.

13. For **Claims 3 and 22**, Egawa et al. disclose, as shown in figures 13, 18, 20, and 29, an image sensing apparatus and a corresponding method of operating thereof (see figures 1 – 3, 8, and 19) comprising (the steps thereof):

a signal generator adapted to generate a signal upon reception of input light (1012 – see figure 18);

a transfer unit adapted to transfer the signal generated by said signal generator (1018 – see figure 18);

an amplification unit adapted to amplify the signal transferred from said transfer unit (1201 – see figure 18); and

a control unit (1106 – see figure 18).

However, Egawa et al. do not disclose a temperature measuring unit adapted to measure a temperature and wherein the control unit is adapted to suppress a gain of said amplification unit to not less than a predetermined value when a temperature measured by said temperature measuring unit is not less than a predetermined temperature.

On the other hand, Goff also disclose an amplification unit and a control unit. Furthermore, Goff specifically teaches in figures 1 and 3, column 3 (lines 35 – 63), and the abstract, a temperature measuring unit (thermometer 19) adapted to measure a temperature and wherein a control unit (control section 22) is adapted to suppress a gain of the amplification unit to not less than a predetermined value when a temperature measured by said temperature measuring unit is not less than a predetermined temperature (see column 4, lines 13 – 16).

As stated in columns 1 (lines 15 – 18) and 2 (lines 49 – 56) of Goff, at the time the invention was made, it would have been obvious to one with ordinary skill in the art to have included a temperature measuring unit and a control unit adapted to change a gain of said amplification unit in accordance with a measurement in said temperature measuring unit, as taught by Goff, in the apparatus including and an amplification unit and a control unit, disclosed by Egawa et al., for the advantage of maintaining consistent electrical characteristics in changing ambient temperatures.

14. For **Claims 10 and 29**, Egawa et al. disclose, as shown in figures 13, 18, 20, and 29, an image sensing apparatus and a corresponding method of operating thereof (see figures 1 – 3, 8, and 19) comprising (the steps thereof):

a signal generator adapted to generate a signal upon reception of input light (1012 – see figure 18);

a transfer unit adapted to transfer the signal generated by said signal generator (1018 – see figure 18);

an amplification unit adapted to amplify the signal transferred from said transfer unit (1201 – see figure 18);

a control unit (1106 – see figure 18); and

a distance calculating unit (1106 – see figure 18 and Step S2013 – see figure 19) adapted to calculate a distance on the basis of a signal amplified by said amplification unit (1201).

However, Egawa et al. do not disclose a temperature measuring unit adapted to measure a temperature and wherein the control unit is adapted to change a gain of said amplification unit in accordance with a measurement in said temperature measuring unit.

On the other hand, Goff also disclose an amplification unit and a control unit. Furthermore, Goff specifically teaches in figures 1 and 3, column 3 (lines 35 – 63), and the abstract, a temperature measuring unit (thermometer 19) adapted to measure a temperature and wherein a control unit (control section 22) is adapted to change a gain of said amplification unit in accordance with a measurement in said temperature measuring unit (see column 4, lines 13 – 16).

As stated in columns 1 (lines 15 – 18) and 2 (lines 49 – 56) of Goff, at the time the invention was made, it would have been obvious to one with ordinary skill in the art to have included a temperature measuring unit and a control unit adapted to change a gain of said amplification unit in accordance with a measurement in said temperature measuring unit, as taught by Goff, in the apparatus including and an amplification unit and a control unit, disclosed by Egawa et al., for the advantage of maintaining consistent electrical characteristics in changing ambient temperatures.

15. As for **Claims 4 and 23**, Egawa et al. disclose, as shown in figures 3, 13, 18, 20, and 29 and stated in column 20 (line 41) – column 21 (line 15), wherein the apparatus further comprises a calculation unit adapted to calculate a correlation between at least two signals amplified by said amplification unit (1201L and 1201R).

16. As for **Claims 5, 18, 19, 24, 37, and 38**, Egawa et al. disclose, as shown in figures 13, 18, 20, and 29, wherein said signal generator (1012 – see figure 18) comprises a plurality of light-receiving units (113 and 114 – see figure 29), formed on different semiconductor substrates, adapted to receive object images and generates said at least two signals.

17. As for **Claims 6, 14, 25, and 33**, Egawa et al. disclose, as shown in figures 1 – 3, 8, 9, 13, 18 – 20, and 29, wherein said transfer unit comprises at least two transfer units (113 and 114 – see figure 29), and while said amplification unit amplifies a signal transferred from one transfer unit, said amplification unit does not amplify a signal transferred from the other transfer unit (The signals from transfer units 113 and 114 are correlated with each other during light projection ON and OFF states; thereby, alternating the readout from the transfer units).

18. As for **Claims 7, 15, 26, and 34**, Egawa et al. disclose, as shown in figures 13, 18, 20, and 29, further comprising a light projection unit (1101 – see figure 18) adapted to project light to an object (1121 – see figure 18), and said signal generator (1012 – see figure 18) receives light reflected by the object and generates a signal upon ON/OFF operation of said light projection unit (Steps S2002 and S2006 – figure 19).

19. As for **Claims 8, 16, 27, and 35**, Egawa et al. disclose, as shown in figures 13, 18, 20, and 29, further comprising a skim unit (117 and 118 – see figure 29) adapted to remove a predetermined amount of charge from a charge transferred from said transfer unit (113 and 114 – see figure 29).

20. As for **Claims 9, 17, 28, and 36**, Egawa et al. disclose, as shown in figures 13, 18, 20, and 29, wherein said transfer unit (1018 – see figure 18) comprises a charge transfer unit at least part of which is coupled in a ring shape (113 and 114 – see figure 29).

21. As for **Claims 11 and 30**, Goff specifically teaches in figures 1 and 3, column 3 (lines 35 – 63), and the abstract, a temperature measuring unit (thermometer 19) adapted to measure a temperature and wherein a control unit (control section 22) is adapted to control a gain of an amplification unit (Stages 1 – 6) at a first temperature (T4) to be lower than a gain of the amplification unit (Stages 1 – 6) at a second temperature (T1) in accordance with a measurement by said temperature measuring unit (19; see column 4, lines 13 – 16), the second temperature (T1) being lower than the first temperature (T4).

22. As for **Claims 12 and 31**, Goff specifically teaches in figures 1 and 3, column 3 (lines 35 – 63), and the abstract, a temperature measuring unit (thermometer 19) adapted to measure a temperature and wherein a control unit (control section 22) is adapted to decrease a gain when a

temperature measured by the temperature measuring unit is higher than a predetermined temperature and increase the gain when the temperature measured by said temperature measuring unit is lower than the predetermined temperature (see column 4, lines 13 – 16).

23. As for **Claims 13 and 32**, Goff specifically teaches in figures 1 and 3, column 3 (lines 35 – 63), and the abstract, a temperature measuring unit (thermometer 19) adapted to measure a temperature and wherein a control unit (control section 22) is adapted to suppress a gain of the amplification unit to not less than a predetermined value when a temperature measured by said temperature measuring unit is not less than a predetermined temperature (see column 4, lines 13 – 16).

24. For **Claims 39 – 46** (please see 35 USC § 101 rejections above), Egawa et al. disclose a control unit (control section 22) for controlling the image sensing and distance measuring apparatus according to the respective claimed methods; thus, while not specifically stated it is inherent that a program causes the control section (22) to perform the methods disclosed in figures 1 – 3, 8, and 19.

Cited Prior Art

25. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure for the following reasons:

- **Takasaki et al.** ('613 and '308) and **Matsumoto et al.** each disclose an image sensing and distance measuring apparatus a signal generator adapted to generate a signal upon reception of input light; a transfer unit adapted to transfer the signal generated by said signal generator; an amplification unit adapted to amplify the signal transferred from said transfer unit (1201 – see

figure 18); a control unit (1106 – see figure 18); and ring shaped CCD transfer units with skimming units.

- **Yoshida et al.** disclose a distance measuring apparatus including a temperature sensor and a distance measurement dependent upon a sensed ambient temperature.
- **Okino** disclose a distance measurement apparatus using a temperature sensor for sensing color temperature and using the sensed temperature for controlling an amplification gain to adjust the white balance of a sensed image.
- **Hamaguchi et al.** disclose an image reader that maintains the color balance in a sensed image by utilizing a temperature sensor to determine the amplification factor of a variable gain amplifier.

Conclusion

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Justin P Misleh whose telephone number is 571.272.7313. The Examiner can normally be reached on Monday through Thursday from 7:30 AM to 5:00 PM and on alternating Fridays from 8:00 AM to 4:30 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Wendy R Garber can be reached on 703.305.4929. The fax phone number for the organization where this application or proceeding is assigned is 703.872.9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JPM
MARCH 18, 2005

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